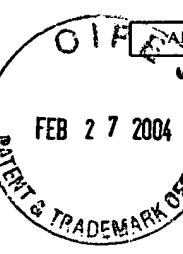




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| APPLICATION NO. | FIILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|--------------|----------------------|---------------------|------------------|
| 109/771,309     | 01/26/2001   | Kazuo Taguchi        | IIDAP6.001CI        | 7653             |



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20995  
7590  
02/26/2003  
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|                 |
|-----------------|
| EXAMINER        |
| COMBS, JANELL A |

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
| 1742     | 10           |

DATE MAILED: 02/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.



## Office Action Summary

|                       |                 |  |
|-----------------------|-----------------|--|
|                       | Application No. | Applicant(s)   |
|                       | 09/771,309      | TAGUCHI ET AL. <span style="float: right;">A9</span> |
| Examiner              | Art Unit        |  |
| Janelle Combs-Morillo | 1742            |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

1) Responsive to communication(s) filed on 10 December 2002.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

4) Claim(s) 2-5 and 7-22 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) 5, 10, 14, 18, 21 and 22 is/are allowed.

6) Claim(s) 2-4, 7-9, 11-13, 15-17, 19 and 20 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some \* c) None of:

- Certified copies of the priority documents have been received.
- Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
- Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a)  The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.

4) Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.

5) Notice of Informal Patent Application (PTO-152)

6) Other: \_\_\_\_\_.

## DETAILED ACTION

### *Drawings*

1. Figure 4A should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 2-4 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wade (US 5,286,316) in view of JP 61-119645A (JP'645).

Wade teaches a process for producing heat exchanger tubing (abstract) from a 3000 series aluminum alloy comprising 0.1-0.5% Mn, wherein said process comprises the steps of homogenizing at 1100°F (593°C) for 24 hours and then homogenizing at 950°F(510°C) for 24 hours (see footnote on Table IVa), cooling at a cooling rate of <200°F/hr (column 10 lines 33-35, column 12 lines 20-23), and extruding (column 12 line 13). Wade teaches “homogenization practice is intended to precipitate the remaining manganese as a dispersoid” (column 5 lines 4-6). Wade broadly teaches homogenizing at temperatures between 750-1180°F (399-638°C).

Homogenizing at 510°C is a close approximation of the presently claimed range of “about 400-500°C”, wherein the expression “about” allows up to  $\pm 10\%$  differences. *In re Preda*, 159 USPQ 342 and *In re Ayers*, 154 F 2d 182, 69 USPQ 109 (CCPA 1946).

Wade does not mention a) extruding by “port hole” extrusion, b) the cooling rate in-between the homogenization steps, or c) the difference in electric conductivity of individual portions in a lengthwise direction.

However, concerning item a), JP'645 teaches that port hole extrusion can be applied to 3000 series alloys that overlap the instant alloying ranges, and is used for producing seamed piping connectors for heat exchanger applications (abstracts, Fig. 1-3).

Concerning item b), though Wade does not specify the cooling rate in-between homogenization steps, because homogenization steps occur in a furnace, it is within the disclosure of Wade to slowly ramp down the furnace within presently claimed cooling rage of  $\leq 100\text{ }^{\circ}\text{C/hr}$ .

Concerning item c), because Wade teaches substantially the same process performed on a substantially overlapping alloy composition, then substantially the same properties, such as a homogeneous conductivity profile, is expected to occur. The examiner asserts that where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). “When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.” *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

It would have been obvious to one of ordinary skill in the art to perform port hole extrusion, as taught by JP'645, after the homogenization cycle of Wade because JP'645 teaches that similar 3000 alloys are suitable for port hole extrusion.

4. Claims 7-9, 15-17, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wade (US 5,286,316) and JP 61-119645A (JP'645), in view of "Metals Handbook: Desk Edition" p 428.

As stated above, Wade and JP'645 teach a process of homogenizing and extruding, substantially as presently claimed.

However, neither Wade nor JP'645 teach a) the presently claimed 3000 series composition, or b) the resulting electric conductivity (instant claims 15-17).

However, concerning item a), "Metals Handbook: Desk Edition" teaches that the presently claimed composition is known (3105, 3003, etc.).

Concerning item b), because Wade teaches substantially the same process performed on a substantially overlapping alloy composition, then substantially the same properties, such as conductivity, is expected to occur.

It would have been obvious to one of ordinary skill in the art to perform the homogenization and extrusion process as taught by Wade and JP'645 on a variety of 3000 series aluminum alloys, such as (3105, 3003, etc.) as taught by the "Metals Handbook: Desk Edition", because 3000 alloys have high corrosion resistance and strength, and are suitable for heat exchanger parts (Wade abstract, JP'645 abstract).

5. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wade (US 5,286,316) and JP 61-119645A (JP'645) as applied to claims above, in view of Sircar (US 5,976,278 A).

Neither Wade nor JP'645 teach drawing after extruding Al-Mn alloy tubes. However, Sircar teaches that following homogenization and extrusion, cold working by drawing (column 6 lines 5-6, column 5 lines 55-57) without localized deformation or necking (column 5 line 57), and thereby obtaining a tube product with an improved surface structure and higher yield (column 5 lines 66-67, column 6 line 1). Sircar teaches that it is convention for 3000 series type heat exchanger tubes to be hot deformed (by extrusion) and then cold worked (by drawing) at column 3 lines 39-57.

It would have been obvious to one of ordinary skill in the art to perform a step of drawing after the 2 step homogenization and subsequent extrusion process taught by Wade, because Sircar teaches that cold working by drawing after extrusion can be done without localized deformation or necking (column 5 line 57), and thereby obtaining a tube product with an improved surface structure and higher yield (column 5 lines 66-67, column 6 line 1).

6. Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gullotti et al (US 3,990,922) and JP 61-052346 A (JP'346).

Gullotti teaches a process for producing hollow material from an aluminum alloy comprising up to 0.40% Mn (column 3 lines 4-5), wherein said process comprises the steps of homogenizing at 557-607°C for 2-12 hours, and then homogenizing at 20-100°F below the solidus (typically 493-538°C) for 2-12 hours (column 2 lines 7-13, column 4 lines 7-8), wherein said process includes slowly cooling to at least 800°F at a rate of < 100°F/hr (column 4 lines 12-

14) followed by cooling to room temperature, and heating up to an extrusion temperature and extruding (column 4 lines 39-45). Gullotti teaches that the heat treatment of the present invention drives elements such as manganese out of solution (Mn precipitates, column 3 lines 62-65).

Gullotti does not mention a) extruding by “port hole” extrusion, b) the cooling rate between the homogenization steps, or c) the difference in electric conductivity of individual portions in a lengthwise direction.

Concerning item a), JP'346 teaches that port hole extrusion can be applied to similar 6000 series alloys, and is used for producing tubes (abstracts, Fig. 1-3).

Concerning item b), though Gullotti does not specify the cooling rate in-between homogenization steps, because homogenization steps occur in a furnace, it is within the disclosure of Gullotti to slowly ramp down the furnace within presently claimed cooling rage of  $\leq 100^{\circ}\text{C}/\text{hr}$ .

Concerning item c), because Gullotti teaches substantially the same process performed on a substantially overlapping alloy composition, then substantially the same properties, such as a homogeneous conductivity profile, is expected to occur.

It would have been obvious to one of ordinary skill in the art to perform port hole extrusion, as taught by JP'346, after the homogenization cycle of Gullotti because JP'346 teaches that similar 6000 alloys are suitable for port hole extrusion.

#### *Response to Amendment/Arguments*

7. In the response filed on December 10, 2002, applicant canceled claims 1 and 6, amended claims 2-5 and 7-10, and added new claims 11-22. The 112 second paragraph rejections have

been overcome. Applicant's argument that the instant invention is allowable over the prior art of record because the prior art does not mention the cooling rate in-between the homogenization steps has not been found persuasive. As stated above, because homogenization steps occur in a furnace, it is within the disclosure of Gullotti or Wade to slowly ramp down the furnace within presently claimed cooling rage of  $\leq 100^{\circ}\text{C}/\text{hr}$ . Applicant has not clearly shown the criticality of the instant range.

Applicant's argument that the present invention is allowable over the prior art of record because neither Gullotti nor Wade teach the difference in electric conductivity of individual portions in a lengthwise direction, has not been found persuasive. As stated above, because the prior art teaches substantially the same process performed on a substantially overlapping alloy composition, then substantially the same properties, such as a homogeneous conductivity profile, is expected to occur. Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977).

#### ***Allowable Subject Matter***

8. Claims 5, 10, 14, 18, 21, and 22 are allowable over the prior art of record. The reasons for allowance can be found in paper no. 7.

***Conclusion***

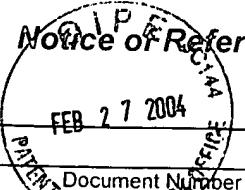
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janelle Combs-Morillo whose telephone number is (703) 308-4757. The examiner can normally be reached on 7:30 am- 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (703) 308-1146. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7719 for regular communications and (703) 305-7719 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

GEORGE WYSZOMIERSKI  
PRIMARY EXAMINER

  
jcm  
February 21, 2003

|   |  |                         |   |             |
|---|--|-------------------------|---|-------------|
|  |  | Application/Control No. | Applicant(s)/Patent Under Reexamination<br>TAGUCHI ET AL. |             |
|   |  | 09/771,309              | Examiner  | Art Unit    |
|   |  | Janelle Combs-Morillo   | 1742  | Page 1 of 1 |

#### U.S. PATENT DOCUMENTS

| * | Document Number<br>Country Code-Number-Kind Code | Date<br>MM-YYYY | Name              | Classification |
|---|--|-----------------|-------------------|----------------|
| ✓ | A US-5,976,278                                   | 11-1999         | Sircar, Subhasish | 148/550        |
|   | B US-  |                 |                   |                |
|   | C US-  |                 |                   |                |
|   | D US-  |                 |                   |                |
|   | E US-  |                 |                   |                |
|   | F US-  |                 |                   |                |
|   | G US-  |                 |                   |                |
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|   | J US-  |                 |                   |                |
|   | K US-  |                 |                   |                |
|   | L US-  |                 |                   |                |
|   | M US-  |                 |                   |                |

#### FOREIGN PATENT DOCUMENTS

| * | Document Number<br>Country Code-Number-Kind Code | Date<br>MM-YYYY | Country | Name | Classification |
|---|--|-----------------|---------|------|----------------|
| N |  |                 |         |      |                |
| O |  |                 |         |      |                |
| P |  |                 |         |      |                |
| Q |  |                 |         |      |                |
| R |  |                 |         |      |                |
| S |  |                 |         |      |                |
| T |  |                 |         |      |                |

#### NON-PATENT DOCUMENTS

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|---|--|--|
| * | Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages |  |
|   | U  |  |
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\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.